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October 31, 2001

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

ATTN: Office of  
Initial Patent  
Examination Customer  
Service Center

Re: New Patent Application  
Serial No: 09/924,115  
For: FRACTURING METHOD USING AQUEOUS OR  
ACID BASED FLUIDS  
Inv: Travis L. Allan et al  
Our File: A-7519.-

Sir:

We are returning a copy of the original filing receipt  
for the above-noted application due to an error with its issuance.

The priority filing date is incorrect. The Canadian  
application filing date is --8-8-2000--, not "9-8-2000".

We have enclosed a copy of the Official Filing Receipt  
with the corrections indicated on the Receipt along with a copy of  
the Declaration and Power of Attorney, for your reference.

Kindly issue a new, corrected filing receipt.

Respectfully submitted,

Stewart L. Gitler  
Reg. No. 31,256

SLG:bks  
Enclosures



## UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
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09/924,115	08/08/2001	1712	438	A-7519.SMP/cat	1	22	3
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CONFIRMATION NO. 9973

UPDATED FILING RECEIPT



\*OC000000006991065\*

Date Mailed: 10/29/2001

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

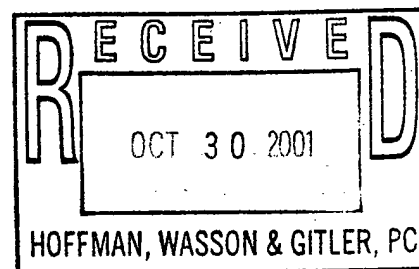
## Applicant(s)

Travis L. Allan, Calgary, CANADA;  
Junad Amin, Calgary, CANADA;  
Alan K. Olson, Strathmore, CANADA;  
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## Domestic Priority data as claimed by applicant

## Foreign Applications

8-8-2000  
CANADA 2,315,544 09/08/2000



If Required, Foreign Filing License Granted 09/13/2001

Projected Publication Date: 03/14/2002

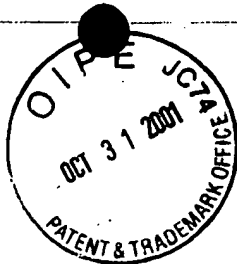
Non-Publication Request: No

Early Publication Request: No

\*\* SMALL ENTITY \*\*

## Title

Fracturing method using aqueous or acid based fluids



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Attorney's Docket No. **TC 1700** 519

## DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **FRACTURING METHOD USING AQUEOUS OR ACID BASED FLUIDS** the specification of which

- ☐ is attached hereto
- ☒ was filed on August 8, 2001 as United States Application No. or PCT International Application Number 09/924,115 and was amended on \_\_\_\_\_  
(if applicable)

I hereby state that I have reviewed and understand the contents thereto of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

PRIOR FOREIGN APPLICATION(S)			
Country	Application Number	Filing Date	Priority Claimed
Canada	2,315,544	August 8, 2000	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

Application Number	Filing Date

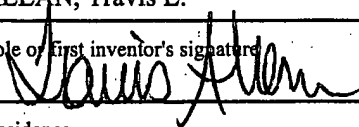
I hereby claim the benefit under 35 U.S.C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C.F.R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

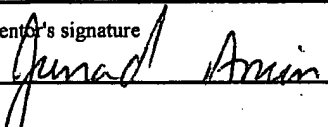
Application Number	Filing Date	Status (patented, pending, abandoned)


**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (*list name and registration number*)


<b>Martin P. Hoffman, Regn. No. 22,261, Stewart L. Gitler, Regn. No. 31,256, Mitchell B. Wasson, Regn. No. 27,408, Douglas W. Robinson, Regn. No. 32,751 and Christopher J. McDonald</b>	
Send Correspondence to: <b>Hoffman, Wasson &amp; Gitler</b> <b>2361 Jefferson Davis Highway</b> <b>Suite 522</b> <b>Arlington, Virginia 22202</b> <b>U. S. A.</b>	Direct Telephone Calls to: ( <i>name and telephone number</i> ) <b>Stewart L. Gitler</b> <b>703-415-0100</b>

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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## FRACTURING METHOD USING AQUEOUS OR ACID BASED FLUIDS

### Field of the Invention

The present invention relates to the field of fracturing fluids, in particular, surfactant based fracturing fluids.

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### 5 Background of the Invention

10 A fracturing fluid is a fluid that is pumped into a hydrocarbon-bearing reservoir in a geological formation under high pressure to open fractures in the formation, thereby to facilitate the flow of hydrocarbons from the formation. Fracturing fluids are preferably viscous, so as to be able to carry proppants into the fractures that are forced open in the formation.

15 Conventional fracturing fluids contain high molecular weight polysaccharides based polymers, as gelling agents. These polymers are associated with build-up of filter cake on the fracture face. If the filter cake is not completely removed, it will impede flow of reservoir fluid and hence reduce the effectiveness of the fracture. Control and limiting of residual filter cake becomes extremely important when dealing with problematic formations. Alternative to the conventional polymeric system is the novel development of the present invention.

20 The present invention is a non-polymeric visco-elastic system. The system is based on surfactant chemistry. Although surfactant based systems have been employed in gravel packing operations since the early 1980s (SPE 17168), further development and refinement of surfactant chemistry has yielded surfactant based fracturing fluids. Some of these techniques are discussed and revealed in Canadian Patent No. 1,298,697 and U.S. Patent No. 5,964,295.

25 The advantage of a surfactant based fracturing fluid over a polymeric gel based fluid is that micelle formation in surfactant fluids is virtually instantaneous, but does not alter the actual chemical composition of the fluid. That is, once a critical concentration of surfactant molecules is reached, they will aggregate as micelles,